```
=> d his

     (FILE 'HOME' ENTERED AT 00:22:48 ON 18 JAN 2008)

     FILE 'REGISTRY' ENTERED AT 00:22:58 ON 18 JAN 2008
L1               STRUCTURE UPLOADED
L2          0 S L1
L3          0 S L1 FULL

     FILE 'HCAPLUS, HCAOLD, USPATFULL, EPFULL' ENTERED AT 00:24:06 ON 18 JAN
     2008
L4      27400 S CAROTENOID OR ASTAXANTHIN OR LYCOPENEE OR CANTHAXANTHIN
L5     118508 S DIALDEHYDE OR DIAL OR C10-DIAL
L6       5401 S L5 AND (ALKOXY OR METHOXY OR ETHOXY OR PROPOXY OR BUTOXY)
L7        100 S L4 AND L6
L8         37 S L7 AND (PHOSPHONIUM SALT OR PHOSPHONIUM COMPOUND OR PHOSPHON
L9         30 S L8 AND (ALKOXIDE OR METHOXIDE OR ETHOXIDE OR ALCOHOLATE)
L10        14 S L9 AND (E-ISOMER OR E-FORM)
L11       190 S ERNST,H/AU
L12         2 S L11 AND CAROTENOID?
L13         2 S HENRICH,K/AU
L14       692 S KELLER,A/AU
L15         0 S L14 AND CAROTENOID?
```

The Contents of Case 10532207

Qnum	Query	DB Name	Thesaurus	Operator	Plural
Q1	carotenoid or astaxanthin or lycopene or canthaxanthin	PGPB,USPT,USOC,EPAB,JPAB,DWPI	None	ADJ	YES
Q2	alkoxydialdehyde or alkoxy-substituted dialdehyde or dialdehyde derivative or C10-dial or alkoxydial or dialdehyde	PGPB,USPT,USOC,EPAB,JPAB,DWPI	None	ADJ	YES
Q3	Q1 and Q2	PGPB,USPT,USOC,EPAB,JPAB,DWPI	None	ADJ	YES
Q4	Q3 and (phosphonium salt or phosphonium compound or phosphonate)	PGPB,USPT,USOC,EPAB,JPAB,DWPI	None	ADJ	YES
Q5	wittig or double wittig or wittig horner	PGPB,USPT,USOC,EPAB,JPAB,DWPI	None	ADJ	YES
Q6	Q4 and Q5	PGPB,USPT,USOC,EPAB,JPAB,DWPI	None	ADJ	YES
Q7	Q6 and (base or basic compound or alkoxide or alcoholate)	PGPB,USPT,USOC,EPAB,JPAB,DWPI	None	ADJ	YES
Q8	Q7 and e-isomer	PGPB,USPT,USOC,EPAB,JPAB,DWPI	None	ADJ	YES
Q9	alkoxy astaxantin or alkoxy-substituted astaxanthin or alkoxy canthaxanthin	PGPB,USPT,USOC,EPAB,JPAB,DWPI	None	ADJ	YES
Q10	methoxyastaxanthin or methoxylycopene or methoxycanthaxanthin	PGPB,USPT,USOC,EPAB,JPAB,DWPI	None	ADJ	YES
Q11	carotenoid or astaxanthin or lycopene or canthaxanthin.CLM.	PGPB	None	ADJ	YES
Q12	dialdehyde or dial or C10-dial.CLM.	PGPB	None	ADJ	YES
Q13	Q12 and (alkoxy or methoxy or ethoxy or butoxy.CLM.)	PGPB	None	ADJ	YES
Q14	Q11 and Q13	PGPB	None	ADJ	YES
Q15	Q14 and (phosphonium salt or phosphonate.CLM.)	PGPB	None	ADJ	YES
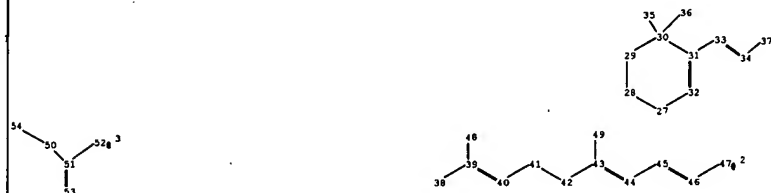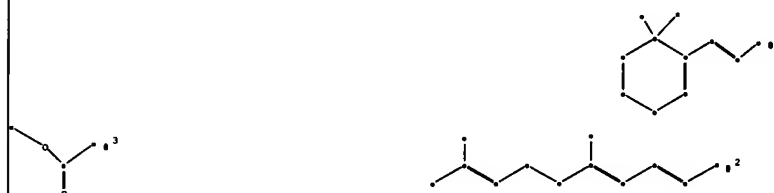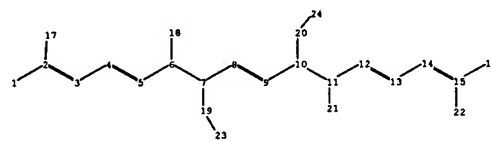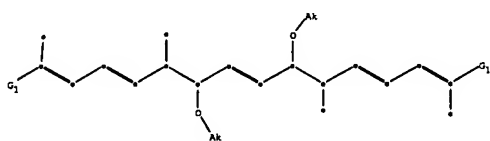
chain nodes :
    1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 33 34 35 36
    37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54
ring nodes :
    27 28 29 30 31 32
chain bonds :
    1-2 2-3 2-17 3-4 4-5 5-6 6-7 6-18 7-8 7-19 8-9 9-10 10-11 10-20 11-12 11-21 12-13
    13-14 14-15 15-16 15-22 19-23 20-24 30-35 30-36 31-33 33-34 34-37 38-39 39-40 39-48
    40-41 41-42 42-43 43-44 43-49 44-45 45-46 46-47 50-51 50-54 51-52 51-53
ring bonds :
    27-28 27-32 28-29 29-30 30-31 31-32
exact/norm bonds :
    1-2 7-19 10-20 15-16 19-23 20-24 27-28 27-32 28-29 29-30 30-31 31-32 50-51 50-54 51-53
exact bonds :
    2-3 2-17 3-4 4-5 5-6 6-7 6-18 7-8 8-9 9-10 10-11 11-12 11-21 12-13 13-14 14-15 15-22
    30-35 30-36 31-33 33-34 34-37 38-39 39-40 39-48 40-41 41-42 42-43 43-44 43-49 44-45
    45-46 46-47 51-52

G1:[*1],[*2],[*3]

Match level :
    1:CLASS2:CLASS3:CLASS4:CLASS5:CLASS6:CLASS7:CLASS8:CLASS9:CLASS10:CLASS11:CLASS
    12:CLASS13:CLASS14:CLASS15:CLASS16:CLASS17:CLASS18:CLASS19:CLASS20:CLASS21:CLASS
    22:CLASS

23:CLASS24:CLASS27:Atom 28:Atom 29:Atom 30:Atom 31:Atom 32:Atom 33:CLASS34:CLASS
35:CLASS36:CLASS37:CLASS38:CLASS39:CLASS40:CLASS41:CLASS42:CLASS43:CLASS44:CLASS
45:CLASS46:CLASS47:CLASS48:CLASS49:CLASS50:CLASS51:CLASS52:CLASS53:CLASS54:CLASS

Element Count :

Node 23: Limited
  C,C1-7

Node 24: Limited
  C,C1-7